Figure 1. Recommended immunization schedule for persons aged 0 through 18 years – United States, 2015.

(For those who fall behind or start late, see the catch-up schedule [Figure 2]).

These recommendations must be read with the footnotes that follow. For those who fall behind or start late, provide catch-up vaccination at the earliest opportunity as indicated by the green bars in Figure 1. To determine minimum intervals between doses, see the catch-up schedule (Figure 2). School entry and adolescent vaccine age groups are shaded.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Birth</th>
<th>1 mo</th>
<th>2 mos</th>
<th>4 mos</th>
<th>6 mos</th>
<th>9 mos</th>
<th>12 mos</th>
<th>15 mos</th>
<th>18 mos</th>
<th>19–23 mos</th>
<th>2–3 yrs</th>
<th>4–6 yrs</th>
<th>7–10 yrs</th>
<th>11–12 yrs</th>
<th>13–15 yrs</th>
<th>16–18 yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis B* (HepB)</td>
<td>1st dose</td>
<td>2nd dose</td>
<td>3rd dose</td>
<td></td>
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<tr>
<td>Rotavirus* (RV) (2-dose series); RSV (3-dose series)</td>
<td>1st dose</td>
<td>2nd dose</td>
<td></td>
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<tr>
<td>Diphtheria, tetanus, &amp; acellular pertussis* (DTaP); &lt;7 yrs)</td>
<td>1st dose</td>
<td>2nd dose</td>
<td>3rd dose</td>
<td></td>
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<tr>
<td>Tetanus, diphtheria, &amp; acellular pertussis* (Tdap); ≥7 yrs)</td>
<td></td>
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<td>4th dose</td>
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<tr>
<td>Haemophilus influenzae type b* (Hib)</td>
<td>1st dose</td>
<td>2nd dose</td>
<td></td>
<td></td>
<td>5th dose</td>
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<tr>
<td>Pneumococcal conjugate* (PCV13)</td>
<td>1st dose</td>
<td>2nd dose</td>
<td>3rd dose</td>
<td></td>
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<tr>
<td>Pneumococcal polysaccharide* (PPSV23)</td>
<td>1st dose</td>
<td>2nd dose</td>
<td></td>
<td></td>
<td>4th dose</td>
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<tr>
<td>Inactivated poliovirus* (IPV; &lt;18 yrs)</td>
<td>1st dose</td>
<td>2nd dose</td>
<td></td>
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<td>3rd dose</td>
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<tr>
<td>Influenza* (IV/IAV): 2 doses for some; See footnote 8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Annual vaccination (IV only) 1 or 2 doses</td>
<td></td>
<td>Annual vaccination (LAIV or IV) 1 or 2 doses</td>
<td>Annual vaccination (LAIV or IV) 1 dose only</td>
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<tr>
<td>Measles, mumps, rubella* (MMR)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1st dose</td>
<td>2nd dose</td>
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<tr>
<td>Varicella* (VAR)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1st dose</td>
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<td>2nd dose</td>
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<tr>
<td>Hepatitis A* (HepA)</td>
<td></td>
<td></td>
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<td></td>
<td>2-dose series, See footnote 11</td>
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<tr>
<td>Human papillomavirus* (HPV; females only; HPV4: males and females)</td>
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<tr>
<td>Meningococcal* (MenB-MenCY ≥ 6 weeks; MenACWY-D ≥ 9 mos; MenACWY-CRM ≥ 2 mos)</td>
<td></td>
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</tbody>
</table>

| Range of recommended ages for all children | Range of recommended ages for catch-up immunization | Range of recommended ages for certain high-risk groups | Range of recommended ages during which catch-up is encouraged and for certain high-risk groups | Not routinely recommended |

This schedule includes recommendations in effect as of January 1, 2015. Any dose not administered at the recommended age should be administered at a subsequent visit, when indicated and feasible. The use of a combination vaccine generally is preferred over separate injections of its equivalent component vaccines. Vaccination providers should consult the relevant Advisory Committee on Immunization Practices (ACIP) statement for detailed recommendations, available online at http://www.cdc.gov/vaccines/hcp/acip-recs/index.html. Clinically significant adverse events that follow vaccination should be reported to the Vaccine Adverse Event Reporting System (VAERS) online (http://www.vaers.hhs.gov) or by telephone (800-822-7967). Suspected cases of vaccine-preventable diseases should be reported to the state or local health department. Additional information, including precautions and contraindications for vaccination, is available from CDC online (http://www.cdc.gov/vaccines/recs/vac-admin/contraindications.htm) or by telephone (800-CDC-INFO [888-232-4636]).

This schedule is approved by the Advisory Committee on Immunization Practices (http://www.cdc.gov/vaccines/acip), the American Academy of Pediatrics (http://www.aap.org), the American Academy of Family Physicians (http://www.aafp.org), and the American College of Obstetricians and Gynecologists (http://www.acog.org).

NOTE: The above recommendations must be read along with the footnotes of this schedule.
**FIGURE 2. Catch-up immunization schedule for persons aged 4 months through 18 years who start late or who are more than 1 month behind — United States, 2015.**

The figure below provides catch-up schedules and minimum intervals between doses for children whose vaccinations have been delayed. A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Use the section appropriate for the child’s age. Always use this table in conjunction with Figure 1 and the footnotes that follow.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Minimum Age For First Dose</th>
<th>Minimum Interval Between Doses</th>
<th>Dose 1 to Dose 2</th>
<th>Dose 2 to Dose 3</th>
<th>Dose 3 to Dose 4</th>
<th>Dose 4 to Dose 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis B&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Birth</td>
<td>4 weeks</td>
<td>8 weeks</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Rotavirus&lt;sup&gt;2&lt;/sup&gt;</td>
<td>6 weeks</td>
<td>4 weeks</td>
<td>4 weeks&lt;sup&gt;2&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diphtheria, tetanus, and acellular pertussis&lt;sup&gt;3&lt;/sup&gt;</td>
<td>6 weeks</td>
<td>4 weeks</td>
<td>4 weeks</td>
<td></td>
<td></td>
<td>6 months&lt;sup&gt;3&lt;/sup&gt;</td>
</tr>
<tr>
<td>Hemophilus influenzae type B&lt;sup&gt;4&lt;/sup&gt;</td>
<td>6 weeks</td>
<td>4 weeks if first dose was administered before the 1&lt;sup&gt;st&lt;/sup&gt; birthday.</td>
<td>8 weeks</td>
<td></td>
<td></td>
<td>6 months&lt;sup&gt;5&lt;/sup&gt;</td>
</tr>
<tr>
<td>Pneumococcal&lt;sup&gt;6&lt;/sup&gt;</td>
<td>6 weeks</td>
<td>4 weeks if first dose was administered before the 1&lt;sup&gt;st&lt;/sup&gt; birthday.</td>
<td>8 weeks</td>
<td></td>
<td></td>
<td>8 weeks as final dose.</td>
</tr>
<tr>
<td>Inactivated poliovirus&lt;sup&gt;7&lt;/sup&gt;</td>
<td>6 weeks</td>
<td>4 weeks&lt;sup&gt;7&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Meningococcal&lt;sup&gt;8&lt;/sup&gt;</td>
<td>6 weeks</td>
<td>8 weeks&lt;sup&gt;7&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measles, mumps, rubella&lt;sup&gt;9&lt;/sup&gt;</td>
<td>12 months</td>
<td>4 weeks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Varicella&lt;sup&gt;9&lt;/sup&gt;</td>
<td>12 months</td>
<td>3 months</td>
<td></td>
<td></td>
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<tr>
<td>Hepatitis A&lt;sup&gt;10&lt;/sup&gt;</td>
<td>12 months</td>
<td>6 months</td>
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<tr>
<td>Tetanus, diphtheria; tetanus, diphtheria, and acellular pertussis&lt;sup&gt;11&lt;/sup&gt;</td>
<td>7 years&lt;sup&gt;11&lt;/sup&gt;</td>
<td>4 weeks</td>
<td>4 weeks</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Human papillomavirus&lt;sup&gt;12&lt;/sup&gt;</td>
<td>9 years</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis A&lt;sup&gt;13&lt;/sup&gt;</td>
<td>Not applicable (N/A)</td>
<td>6 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis B&lt;sup&gt;1&lt;/sup&gt;</td>
<td>N/A</td>
<td>4 weeks</td>
<td>8 weeks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inactivated poliovirus&lt;sup&gt;14&lt;/sup&gt;</td>
<td>N/A</td>
<td>4 weeks</td>
<td>4 weeks&lt;sup&gt;2&lt;/sup&gt;</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Meningococcal&lt;sup&gt;15&lt;/sup&gt;</td>
<td>N/A</td>
<td>8 weeks&lt;sup&gt;13&lt;/sup&gt;</td>
<td></td>
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<tr>
<td>Measles, mumps, rubella&lt;sup&gt;16&lt;/sup&gt;</td>
<td>N/A</td>
<td>4 weeks</td>
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<tr>
<td>Varicella&lt;sup&gt;17&lt;/sup&gt;</td>
<td>N/A</td>
<td>3 months if younger than age 13 years.</td>
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</tbody>
</table>

**NOTE:** The above recommendations must be read along with the footnotes of this schedule.
1. **Hepatitis B (HepB) Vaccine** (Minimum age: birth)

   **Routine vaccination:**
   - Administer monovalent high-titer vaccine to all newborns.
   - Administer HepB vaccine to infants as part of the infant vaccination series.
   - Administer HepB vaccine to infants younger than 12 months who did not receive the HepB vaccine as part of the routine series.

2. **Rotavirus (RV) Vaccines** (Minimum age: 6 weeks)

   - Administer as part of the infant vaccination series.
   - Administer as part of the infant vaccination series for infants aged 6-14 weeks.
   - Administer as part of the infant vaccination series for infants aged 6-15 months.

3. **Diphtheria, and tetanus toxoids and acellular pertussis (DTaP) Vaccine (cont’d)**

   - Administer as part of the infant vaccination series.
   - Administer as part of the infant vaccination series for infants aged 6-15 months.

4. **Tetanus and diphtheria toxoids and acellular pertussis (Tdap) Vaccine** (Age: 10-16 years for both Booster or Adult)

   - Administer as part of the infant vaccination series.
   - Administer as part of the infant vaccination series for infants aged 6-15 months.

Additional Information:
- For further guidance on the use of the vaccines mentioned below, see: [http://www.cdc.gov/vaccine/hcp/acip-resource](http://www.cdc.gov/vaccine/hcp/acip-resource).

For vaccine recommendations for persons aged 19 years of age and older, see the Adult Immunization Schedule.
5. Haemophilus influenzae type b (Hib) conjugate vaccine (cont’d)

- Catch-up vaccination:
  - If dose 1 was administered at ages 12 through 14 months, administer a second (final) dose at least 8
    weeks after the dose 1, regardless of Hib vaccine use in the primary series.
  - If both doses were PRP-OMP (PedvaxHIB or Comvax), and were administered before the first birthday, the
    third (and final) dose should be administered at age 12 through 59 months and at least 8 weeks after the
    previous dose.
  - If the first dose was administered at age 7 through 11 months, administer the second dose at least 4
    months later and a third (and final) dose at age 12 through 15 months or 8 weeks after second dose, whichever
    is later.
  - If first dose is administered before the first birthday and second dose administered at younger than 15
    months, a third (and final) dose should be given 8 weeks later.
  - For unvaccinated children aged 15 months or older, administer only dose 1.
  - For other catch-up guidance, see Figure 2. For catch-up guidance related to MenHibrix, please see the
    meningococcal vaccine footnotes and also MMWR February 28, 2014 / 63(RR01)-1; 13, available at
    http://www.cdc.gov/mmWR/pdf/mm6301.pdf.

- Vaccination of persons with high-risk conditions:
  - Children aged 12 through 59 months who are at increased risk for Hib disease, including chemotherapy
    recipients and those with anatomic or functional asplenia (including sickle cell disease), human
    immunodeficiency virus (HIV) infection, immunoglobulin deficiency, or early component complement
    deficiency, who have received either no doses or only 1 dose of Hib vaccine before 12 months of age,
    should receive 2 additional doses of Hib vaccine 8 weeks apart; children who received 2 or more doses
    of Hib vaccine before 12 months of age should receive 1 additional dose.
  - For patients younger than 5 years of age undergoing chemotherapy or radiation treatment who received
    a Hib vaccine dose(s) within 14 days of starting therapy or during therapy, repeat the dose(s) at least 3
    months following therapy completion.
  - HIV-positive hematopoietic stem cell transplant (HSCT) should be revaccinated with a 3-dose regimen
    of Hib vaccine starting 6 to 12 months after successful transplant, regardless of vaccination history; doses
    should be administered at least 4 weeks apart.
  - A single dose of any Hib-containing vaccine should be administered to unimmunized* children and
    adolescents 15 months of age and older undergoing an elective splenectomy; if possible, vaccine should be
    administered at least 14 days before procedure.
  - Hib vaccine is not routinely recommended for patients 5 years or older. However, 1 dose of Hib vaccine
    should be administered to unimmunized* persons aged 5 years or older who have anatomic or
    functional asplenia (including sickle cell disease) and unvaccinated persons 5 through 18 years of age
    with human immunodeficiency virus (HIV) infection.
  - *Patients who have not received a primary series and booster dose or at least 1 dose of Hib vaccine after 14
    months of age are considered unimmunized.

6. Pneumococcal vaccines. (Minimum age: 6 weeks for PCV13, 2 years for PPSV23)

- Routine vaccination with PCV13:
  - Administer a 4-dose series of PCV13 vaccine at ages 2, 4, 6 through 18 months, and 4 through 6 years.
  - For children aged 14 through 59 months who have received an age-appropriate dose of 7-valent PCV
    (PCV7), administer a single supplemental dose of 13-valent PCV (PCV13).

- Catch-up vaccination with PCV13:
  - Administer 1 dose of PCV13 to all healthy children aged 24 through 59 months who are not completely
    vaccinated for their age.
  - For other catch-up guidance, see Figure 2.

- Vaccination of persons with high-risk conditions with PCV13 and PPSV23:
  - All recommended PCV13 doses should be administered prior to PPSV23 vaccination if possible.
  - For children 2 through 5 years of age with any of the following conditions: chronic heart disease
    (paroxysmal supraventricular tachycardia) or scarring from congenital heart disease; chronic lung disease
    (including asthma if treated with high-dose inhaled corticosteroid therapy); diabetes mellitus; cerebrospinal fluid leak;
    cochlear implant; sickle cell disease and other hemoglobinopathies; anatomic or functional asplenia;
    leukemia; congenital immune disorders; immunodeficiency syndromes; disease associated with treatment
    with immunosuppressive drugs or radiation therapy, including malignancies (neoplasms), leukemias, lymphomas,
    and Hodgkin’s disease; solid organ transplantation; or congenital immunodeficiencies.
  - 1. Administer 1 dose of PCV13 if any incomplete schedule of 3 doses of PCV (PCV7/and/or PCV13) were
    received previously.
  - 2. Administer 2 doses of PCV13 at least 8 weeks apart if unvaccinated or any incomplete schedule of fewer
    than 3 doses of PCV (PCV7 and/or PCV13) were received previously.
  - 3. Administer 1 supplemental dose of PCV13 if 4 doses of PCV7 or other age-appropriate complete PCV7
    series was received previously.
  - 4. The minimum interval between doses of PCV (PCV7 or PCV13) is 8 weeks.
  - 5. For children with no history of PPSV23 vaccination, administer PPSV23 at least 8 weeks after the most
    recent dose of PCV13.

7. Inactivated poliovirus vaccine (IPV). (Minimum age: 6 weeks)

- Routine vaccination:
  - Administer a 4-dose series of IPV at ages 2, 4, 6 through 18 months, and 4 through 6 years.
  - The final dose in the series should be administered on or after the fourth birthday and at least 6 months before the previous dose.

- Catch-up vaccination:
  - In the first 6 months of life, minimum age and minimum intervals are only recommended if the person is at risk
    of meningitis or encephalitis from a circulating poliovirus (i.e., travel to a polio-endemic region or during an outbreak).
  - If 4 or more doses are administered before age 4 years, an additional dose should be administered at age 4
    through 6 years and at least 6 months after the previous dose.
  - A fourth dose is not necessary if the third dose was administered at age 4 years or older and at least 6 months
    after the previous dose.
  - If both OPV and IPV were administered as part of a series, a total of 4 doses should be administered, regardless
    of the child’s current age. IPV is expressly recommended for U.S. residents aged 18 years or older.
  - For other catch-up guidance, see Figure 2.

8. Influenza vaccines. (Minimum age: 6 months for inactivated influenza vaccine [IIV],
   2 years for live, attenuated influenza vaccine [LAIV])

- Routine vaccination:
  - Administer influenza vaccine annually to all children beginning at age 6 months. For most healthy,
    nonpregnant persons aged 2 through 49 years, either LAIV or IIV may be used. However, LAIV should NOT be
    administered to some persons, including 1) persons who have experienced severe allergic reactions to
    LAIV, any of its components, or to a previous dose of any other influenza vaccine; 2) children 2 through
    17 years receiving aspirin or aspirin-containing products; 3) persons who are allergic to eggs; 4) pregnant
    women; 5) immunosuppressed persons; 6) children 2 through 4 years of age with asthma or who had
    wheezing in the past 12 months; or 7) persons who have taken influenza antiviral medications in the
    previous 48 hours. For all other contraindications and precautions to use of LAIV, see MMWR August 15,

- For children aged 6 months through 8 years:
  - For the 2014-15 season, administer 2 doses (separated by at least 4 weeks) to children who are receiving
    influenza vaccine for the first time. Some children in this age group who have been vaccinated previously
    will also need 2 doses. For additional guidance, follow dosing guidelines in the 2014-15 ACIP influenza
    cdc.gov/mmWR/pdf/mm6332.pdf.
  - For the 2015-16 season, follow dosing guidelines in the 2015 ACIP influenza vaccine recommendations.

- For persons aged 9 years and older:
  - Administer 1 dose.
For further guidance on the use of the vaccines mentioned below, see: http://www.cdc.gov/vaccines/hcp/-acip-recs/index.html.

9. Measles, mumps, and rubella (MMR) vaccine. (Minimum age: 12 months for routine vaccination)
   Routine vaccination:
   - Administer a 2-dose series of MMR vaccine at ages 12 through 15 months and 4 through 6 years. The second dose may be administered before age 4 years, provided at least 4 weeks have elapsed since the first dose.
   - Administer 1 dose of MMR vaccine to infants aged 6 through 11 months before departure from the United States for international travel. These children should be revaccinated with 2 doses of MMR vaccine, the first at age 12 through 15 months (12 months if the child remains in an area where disease risk is high), and the second dose at least 4 weeks later.
   - Administer 2 doses of MMR vaccine to children aged 12 months and older before departure from the United States for international travel. The first dose should be administered on or after age 12 months and the second dose at least 4 weeks later.
   Catch-up vaccination:
   - Ensure that all school-aged children and adolescents have had 2 doses of MMR vaccine; the minimum interval between the 2 doses is 4 weeks.

10. Varicella (VAR) vaccine. (Minimum age: 12 months)
    Routine vaccination:
    - Administer a 2-dose series of VAR vaccine at ages 12 through 15 months and 4 through 6 years. The second dose may be administered before age 4 years, provided at least 3 months have elapsed since the first dose. If the second dose was administered at least 4 weeks after the first dose, it can be accepted as valid.
    Catch-up vaccination:
    - Ensure that all persons aged 7 through 18 years without evidence of immunity (see MMWR 2007 / 56 [No. RR-4], available at http://www.cdc.gov/mmwr/pdf/rr/rr5604.pdf) have 2 doses of varicella vaccine. For children aged 7 through 12 years, the recommended minimum interval between doses is 3 months (if the second dose was administered at least 4 weeks after the first dose, it can be accepted as valid); for persons aged 13 years and older, the minimum interval between doses is 4 weeks.

11. Hepatitis A (HepA) vaccine. (Minimum age: 12 months)
    Routine vaccination:
    - Initiate the 2-dose HepA vaccine series at 12 through 23 months; separate the 2 doses by 6 to 18 months. 
    - Children who have received 1 dose of HepA vaccine before age 24 months should receive a second dose 6 to 18 months after the first dose. 
    - For any person aged 2 years and older who has not already received the HepA vaccine series, 2 doses of HepA vaccine separated by 6 to 18 months may be administered if immunity against hepatitis A virus infection is desired. 
    Catch-up vaccination:
    - The minimum interval between the two doses is 6 months.
    Special populations:
    - Administer 2 doses of HepA vaccine at least 6 months apart to previously unvaccinated persons who live in areas where vaccination programs target older children, or who are at increased risk for infection. This includes persons traveling to or working in countries that have high or intermediate endemicity of infectious disease, or who have recent history of injection or non-injection illicit drugs; persons who work with HAV-infected primates or with HAV in a research laboratory; persons with clotting-factor disorders; persons with chronic liver disease; and persons who anticipate close personal contact (e.g., household or regular babysitting) with an international adoptee during the first 60 days after arrival in the United States from a country with high or intermediate endemicity. The first dose should be administered as soon as the adoption is planned, ideally 2 or more weeks before the arrival of the adoptee.

12. Human papillomavirus (HPV) vaccines. (Minimum age: 9 years for HPV2 [Cervarix] and HPV4 [Gardasil])
    Routine vaccination:
    - Administer a 3-dose series of HPV vaccine on a schedule of 0, 1, 2, and 6 months to all adolescents aged 11 through 12 years. Either HPV4 or HPV2 may be used for females, and only HPV4 may be used for males.
    - The vaccination series may be started at age 9 years.
    - Administer the second dose 1 to 2 months after the first dose (minimum interval of 4 weeks); administer the third dose 24 weeks after the first dose and 16 weeks after the second dose (minimum interval of 12 weeks).
    Catch-up vaccination:
    - Administer the vaccine series to females (either HPV2 or HPV4) and males (HPV4) at age 13 through 18 years if not previously vaccinated.
    - Use recommended routine dosing intervals (see Routine vaccination above) for vaccine series catch-up.

13. Meningococcal conjugate vaccines. (Minimum age: 6 weeks for Hib-MenCY [Men Hibrix], 9 months for MenACWY-D [Menactra], 2 months for MenACWY-CRM [Menveo])
    Routine vaccination:
    - Administer a single dose of Menactra or Menveo vaccine at age 11 through 12 years, with a booster dose at age 16 years.
    - Adolescents aged 11 through 18 years with human immunodeficiency virus (HIV) infection should receive a 2-dose primary series of Menactra or Menveo with at least 8 weeks between doses.
    - For children aged 2 months through 18 years with high-risk conditions, see below.
    Catch-up vaccination:
    - Administer Menactra or Menveo vaccine at age 13 through 18 years if not previously vaccinated.
    - If the first dose is administered at age 13 through 15 years, a booster dose should be administered at age 16 through 18 years with a minimum interval of at least 8 weeks between doses.
    - If the first dose is administered at age 16 years or older, a booster dose is not needed.
    - For other catch-up guidance, see Figure 2.
    Vaccination of persons with high-risk conditions and other persons at increased risk of disease:
    - Children with anatomic or functional asplenia (including sickle cell disease):
      1. Menveo
         - Children who initiate vaccination at 8 weeks through 6 months: Administer doses at 2, 4, 6, and 12 months of age.
         - Unvaccinated children 7 through 23 months: Administer 2 doses, with the second dose at least 12 weeks after the first dose AND after the first birthday.
         - Children 24 months and older who have not received a complete series: Administer 2 primary doses at least 8 weeks apart.
      2. Menhibrix
         - Children 6 weeks through 18 months: Administer doses at 2, 4, 6, and 12 through 15 months of age.
         - If the first dose of Menhibrix is given at or after 12 months of age, a total of 2 doses should be given at least 8 weeks apart to ensure protection against serogroups C and Y meningococcal disease.
      3. Menactra
         - Children 24 months and older who have not received a complete series: Administer 2 primary doses at least 8 weeks apart. If Menactra is administered to a child with asplenia (including sickle cell disease), do not administer Menactra until 2 years of age and at least 4 weeks after the completion of all PCV13 doses.
      - Children with persistent complement component deficiency:
        1. Menveo
           - Children who initiate vaccination at 8 weeks through 6 months: Administer doses at 2, 4, 6, and 12 months of age.
           - Unvaccinated children 7 through 23 months: Administer 2 doses, with the second dose at least 12 weeks after the first dose AND after the first birthday.
           - Children 24 months and older who have not received a complete series: Administer 2 primary doses at least 8 weeks apart.
        2. Menhibrix
           - Children 6 weeks through 18 months: Administer doses at 2, 4, 6, and 12 through 15 months of age.
           - If the first dose of Menhibrix is given at or after 12 months of age, a total of 2 doses should be given at least 8 weeks apart to ensure protection against serogroups C and Y meningococcal disease.
      3. Menactra
        - Children 9 through 23 months: Administer 2 primary doses at least 12 weeks apart.
        - Children 24 months and older who have not received a complete series: Administer 2 primary doses at least 8 weeks apart.
    - For children who travel to or reside in countries in which meningococcal disease is hyperendemic or epidemic, including countries in the African meningitis belt or the Hajj, administer an age-appropriate formulation and series of Menactra or Menveo for protection against serogroups A and W meningococcal disease. Prior receipt of Menhibrix is not sufficient for children traveling to the meningitis belt or the Hajj because it does not contain serogroups A or W.
    - For children at risk during a community outbreak attributable to a vaccine serogroup, administer or complete an age- and formulation-appropriate series of Menhibrix, Menactra, or Menveo.

For other catch-up recommendations for these persons, and complete information on use of meningococcal vaccines, including guidance related to vaccination of persons at increased risk of infection, see MMWR 2022 / 61(IR02):1-22, available at http://www.cdc.gov/mmwr/pdf/rr/rr6202pdf.pdf.